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Translation

PATENT COOPERATION TREATY

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PCT/JP2004/000426



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FI-7403	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2004/000426	International filing date (day/month/year) 20 January 2004 (20.01.2004)	Priority date (day/month/year) 24 January 2003 (24.01.2003)
International Patent Classification (IPC) or national classification and IPC C10G 11/05, B01J 29/40		
Applicant IDEMITSU KOSAN CO., LTD.		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 3 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
  - ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - ☐ (sent to the International Bureau only) a total of \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 14 May 2004 (14.05.2004)	Date of completion of this report 02 May 2005 (02.05.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/000426

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
    - ☐ international search (under Rules 12.3 and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4)
    - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
  - ☒ The international application as originally filed/furnished
    - ☐ the description:
      - pages \_\_\_\_\_, as originally filed/furnished
      - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
      - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - ☐ the claims:
      - pages \_\_\_\_\_, as originally filed/furnished
      - pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19
      - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
      - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - ☐ the drawings:
      - pages \_\_\_\_\_, as originally filed/furnished
      - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
      - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
  - 3. ☐ The amendments have resulted in the cancellation of:
    - ☐ the description, pages \_\_\_\_\_
    - ☐ the claims, Nos. \_\_\_\_\_
    - ☐ the drawings, sheets/figs \_\_\_\_\_
    - ☐ the sequence listing (*specify*): \_\_\_\_\_
    - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
  - 4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
    - ☐ the description, pages \_\_\_\_\_
    - ☐ the claims, Nos. \_\_\_\_\_
    - ☐ the drawings, sheets/figs \_\_\_\_\_
    - ☐ the sequence listing (*specify*): \_\_\_\_\_
    - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP04/000426

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)

Claims

1-6

YES

Claims

NO

Inventive step (IS)

Claims

YES

Claims

1-6

NO

Industrial applicability (IA)

Claims

1-6

YES

Claims

NO

## 2. Citations and explanations (Rule 70.7)

### Claims 1-3, 5 and 6

Document 1 (the claims, [0009]) cited in the ISR describes a process of catalytic cracking of hydrocarbon wherein the reaction takes place in the presence of a crystalline aluminosilicate zeolite catalyst where the atomic proportion of a rare earth element such as lanthanum carried relative to aluminum contained in zeolite is in the range of 0.4-20 under the same conditions of temperature, pressure, and the ratio of steam to hydrocarbon as in the present application. Document 1 ([0009]) also suggests that the said reaction takes place on a fluid bed. Accordingly, a person skilled in the art could have easily created a constitution wherein the reaction takes place on a fluid bed, and then prescribed an appropriate ratio of the catalyst to hydrocarbon and an appropriate time of contact in the reaction, as required.

### Claim 4

Document 1 ([0006]) describes that the ratio of  $\text{SiO}_2$  to  $\text{Al}_2\text{O}_3$  is in the range of 25-800.

### List of cited documents:

Document 1: JP, 11-180902, A (Idemitsu Petrochemical Co., Ltd.)

様式PCT/IPEA/409 (表紙) (2004年1月)

## 第I欄 報告の基礎

1. この国際予備審査報告は、下記に示す場合を除くほか、国際出願の言語を基礎とした。

☐ この報告は、\_\_\_\_\_語による翻訳文を基礎とした。

それは、次の目的で提出された翻訳文の言語である。

- ☐ PCT規則12.3及び23.1(b)にいう国際調査  
☐ PCT規則12.4にいう国際公開  
☐ PCT規則55.2又は55.3にいう国際予備審査

2. この報告は下記の出願書類を基礎とした。(法第6条(PCT14条)の規定に基づく命令に応答するために提出された差替え用紙は、この報告において「出願時」とし、この報告に添付していない。)

☒ 出願時の国際出願書類

☐ 明細書

第\_\_\_\_\_ページ、出願時に提出されたもの

第\_\_\_\_\_ページ\*、\_\_\_\_\_付けで国際予備審査機関が受理したもの

第\_\_\_\_\_ページ\*、\_\_\_\_\_付けで国際予備審査機関が受理したもの

☐ 請求の範囲

第\_\_\_\_\_項、出願時に提出されたもの

第\_\_\_\_\_項\*、PCT19条の規定に基づき補正されたもの

第\_\_\_\_\_項\*、\_\_\_\_\_付けで国際予備審査機関が受理したもの

第\_\_\_\_\_項\*、\_\_\_\_\_付けで国際予備審査機関が受理したもの

☐ 図面

第\_\_\_\_\_ページ/図、出願時に提出されたもの

第\_\_\_\_\_ページ/図\*、\_\_\_\_\_付けで国際予備審査機関が受理したもの

第\_\_\_\_\_ページ/図\*、\_\_\_\_\_付けで国際予備審査機関が受理したもの

☐ 配列表又は関連するテーブル

配列表に関する補充欄を参照すること。

3. ☐ 補正により、下記の書類が削除された。

☐ 明細書 第\_\_\_\_\_ページ

☐ 請求の範囲 第\_\_\_\_\_項

☐ 図面 第\_\_\_\_\_ページ/図

☐ 配列表(具体的に記載すること) \_\_\_\_\_

☐ 配列表に関連するテーブル(具体的に記載すること) \_\_\_\_\_

4. ☐ この報告は、補充欄に示したように、この報告に添付されかつ以下に示した補正が出願時における開示の範囲を超えてされたものと認められるので、その補正がされなかったものとして作成した。(PCT規則70.2(c))

☐ 明細書 第\_\_\_\_\_ページ

☐ 請求の範囲 第\_\_\_\_\_項

☐ 図面 第\_\_\_\_\_ページ/図

☐ 配列表(具体的に記載すること) \_\_\_\_\_

☐ 配列表に関連するテーブル(具体的に記載すること) \_\_\_\_\_

\* 4. に該当する場合、その用紙に“superseded”と記入されることがある。

第V欄 新規性、進歩性又は産業上の利用可能性についての法第12条(PCT35条(2))に定める見解、  
それを裏付ける文献及び説明

## 1. 見解

新規性(N)	請求の範囲 1-6	有
	請求の範囲	無
進歩性(IS)	請求の範囲	有
	請求の範囲 1-6	無
産業上の利用可能性(IA)	請求の範囲 1-6	有
	請求の範囲	無

## 2. 文献及び説明(PCT規則70.7)

## 請求の範囲1、2、3、5、6

国際調査報告で引用した文献1には、炭化水素の接触分解法であって、ランタン等の希土類元素の担持量がゼオライト中のアルミニウムに対して原子比で0.4~20の範囲である結晶性アルミノシリケートゼオライト触媒の存在下に、本願の温度、圧力、スチーム/炭化水素比と同じ反応条件で行う方法が記載されている(特許請求の範囲、【0009】欄)。また同1には、当該反応を流動床で行うことも示唆されている(【0009】欄)ので、流動床で行うことは当業者が容易になしうる事項であるし、その際の好適な触媒/炭化水素比や接触時間を規定することは当業者が適宜なし得る事項である。

## 請求の範囲4

同1には、 $\text{SiO}_2/\text{Al}_2\text{O}_3$ 比が25~800であることも記載されている(【0006】)。

## (引用文献一覧)

1. JP 11-180902 A (出光石油株式会社)